Methods: During March, 2010 to June, 2013, 98 specimens were collected from patients with Candida infection. We detected the virulence of Candida by lecithinase test and hemolysis test. At the same time, the distribution characteristics of different ages were analyzed among the patients.
Results: For the virulence, there were no difference between Candida albicans and other Candidas ($p > 0.05$). The virulence of Candida albicans in deep infection were stronger than others in superficial infection($p < 0.01$).
Conclusions: In the infection status, different strains of candida have the same virulence's level of lecithinase and hemolysis. The virulence of Candida albicans relates to the infection site. The lecithinase test and hemolysis test may be regarded as the evaluation index for testing the virulence of Candida.

OS 1-7

ASPERGILLUS SPP. IN ICUS: SPECTRUM OF INFECTIONS WITH ANTIFUNGAL SUSCEPTIBILITY PATTERNS OF CLINICAL AND ENVIRONMENTAL ISOLATES

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Purpose: In this prospective study, we noted spectrum of infections with *Aspergillus* spp. in ICU along with isolation of any environmental isolates occurring in a Northern India tertiary care hospital during two years (2011—2013) with antifungal susceptibility profiles of all isolates.
Methods: Phenotypic identification was done following standard mycological procedures. Air sampling was done to collect environmental *Aspergillus* spp. isolates from the ICUs. Antifungal susceptibility patterns to polyene, azole and echinocandin group of drugs were tested by CLSI M38-A2 guidelines and CLSI M51-A guidelines were followed for voriconazole.
Results: A total of 70 *Aspergillus* spp. clinical isolates were obtained from 60 patients. There were 35 *Aspergillus fumigatus* followed by 33 *Aspergillus flavus* and 02 *Aspergillus nidulans*.

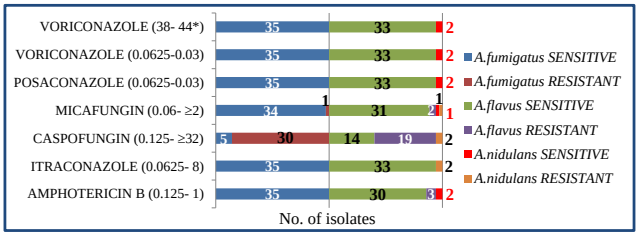

Figure 1 MIC range (μg/ml) of the *Aspergillus* spp. ICU clinical isolates. (*zone diameter in mm)

There were 08 environmental isolates obtained from the ICUs, 04 *Aspergillus fumigatus* and 02 *Aspergillus flavus* and *Aspergillus niger* each. MICs were lower for environmental isolates except one isolate of *Aspergillus flavus* to caspofungin and itraconazole.
Conclusion:In our clinical settings, most common site of *Aspergillus* infections was pulmonary (90%). *Aspergillus fumigatus* was the commonest species isolated which was at par with *Aspergillus flavus* (50% vs 45%). Antifungal susceptibility testing revealed that voriconazole and posaconazole were sensitive to all the isolates suggesting these can be included in the pre-emptive treatment of patients in ICUs.

OS 1-8

TOLL-LIKE RECEPTOR POLYMORPHISMS AS RISK FACTOR FOR *CLOSTRIDIUM DIFFICILE* COLONIZATION AND INFECTION

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Purpose: Patients with TLR4 polymorphisms were more likely to have intestinal infections due to gram-negative organisms. This study is to investigate the impact of toll-like receptor (TLR) polymorphism on *Clostridium difficile* colonization and infection.
Methods: Adults admitted to medical wards in a district hospital between January 2011 and January 2013 were enrolled, and those with a history of colectomy, *C. difficile* fecal colonization or infection or receipt of either metronidazole or oral vancomycin within 3 months, were excluded. Stools collected within 48 hours after admission and every week during hospitalization were cultured for *C. difficile*.
Results: Among the 445 enrolled patients, 92 (20.7%) developed toxic *C. difficile* colonization (tCdC) and 21 (4.7) developed *C. difficile* associated diarrhea (CDAD). The mortality rate was 13.7 %. There was no difference in age, gender, receipt of antibiotics or proton-pump inhibitor or underlying disease (including diabetes mellitus, hypertension, old stroke, chronic kidney disease or having malignancy) among patients with different TLR4 rs1927914 polymorphism (GG, GA or AA type). We found TLR4 rs1927914 polymorphism A-carrier (including GA and AA) was associated with developing CDAD compared to GG type (4.9 and 5.2 vs 2.9 %, $P = 0.02$) but not correlated with tCDC or mortality. Other TLR4 polymorphism (rs10983755) and three TLR2 SNPs (rs1898830, rs3804099, and rs7656411) were also analyzed but not related to CDAD or tCDC.
Conclusions: The incidence of CDAD is highest in patients with the TLR4 rs1927914 polymorphism GA and AA genotype.

	Toll-like receptor polymorphism-4 rs19279140			*P* values
	GG n = 68	GA n = 205	AA n = 172	
C. difficile colonization	20 (29.4)	41 (20.0)	31 (18.0)	0.14
C. difficile associated diarrhea	2 (2.9)	10 (4.9)	9 (5.2)	0.02
Mortality	9 (13.2)	35 (17.2)	17 (9.9)	0.12

OS 1-9

MATRIX-ASSISTED LASER DESORPTION/IONIZATION TIME-OF-FLIGHT MASS SPECTROMETRY FOR THE IDENTIFICATION OF BETA-HEMOLYTIC STREPTOCOCCI

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Purpose: To evaluate the application of two mostly utilized commercial platforms of matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) for the identification of clinical isolated *beta-hemolytic streptococci* (BHS).
Methods: Clinical isolated BHS were identified by BD Phoenix SMIC/ID streptococcal panels, Vitek MS system and Bruker MALDI Biotyper system, respectively. In the case of discordant results, 16sRNA sequencing of the strains was performed as reference ID.
Results: A total of 96 isolates of *beta-haemolytic streptococci* was analyzed. 36 isolates were re-tested a second time to resolve no identification results using the BD Phoenix system. Likewise, 4 isolates had to be re-run on the Bruker system. Identification results were provided for all 96 isolates on the first test run using the VITEK MS system. The BD Phoenix

automated system accurately identified 76 (79.2%), VITEK MS identified 93 (96.6%), and BioTyper identified 90 (93.8%) of the total 96 isolates.
Conclusion: Both Bruker ID MS and Vitek ID MS were superior to conventional phenotypic methods for the identification of BHS.

OS 2-1

EFFICACY OF A LOCAL HOSPITAL TO ADVOCATE CVC BUNDLE CARE FOR DECLINING BLOOD STREAM INFECTION

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Purpose: Central-line associated blood stream infection (CLABSI), which results in extended hospital stay, more medical cost and even mortality, is mandatory to prevent. Thus, our hospital takes part in the CVC bundle care plan since 2013 and extends to more wards this year. Our efficacy of promoting CVC bundle care in our hospital this year is shown here.
Methods: We set up a special group led by our assistant administrator and hold a meeting each quarter. Education training activity, online learning classes and benchmarking are principal parts of our focus. Moreover, we try our best to reach online sheets to raise the completeness of check sheets and will accomplish in 2015. Two major changes of CVC bundle care proposed by Centers for Disease Control (CDC) this year are maximal barrier precautions (a 305 × 172 cm drape) and intensive catheter care (Wipe IV lock hard for 15 seconds with alcohol swab before using it). We obey the guideline of CVC bundle care seriously ; therefore, our check results by auditors form our infection control room or other hospitals are outstanding, only with a tiny default.
Results: Indicators for monitoring infection, like CLABSI, in all participant wards let up significantly and one ward attains zero tolerance for 15 months. Fortunately, we win innovation excellence award and golden prize of poster display.
Conclusions: We really get great efficacy from the plan and will continue to adhere to CVC bundle care demurely and reach the goal of zero tolerance with our cooperation and insistence to abate infection rate and boost medical quality.

OS 2-2

IMPROVEMENT ON HOSPITAL ENVIRONMENT HYGIENE TO CONTROL THE SPREAD OF MULTIPLE-DRUG RESISTANT ORGANISMS (MDROS)

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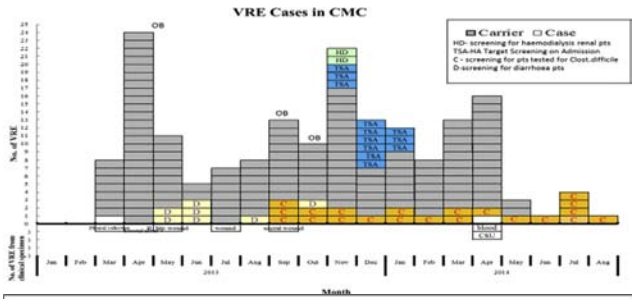
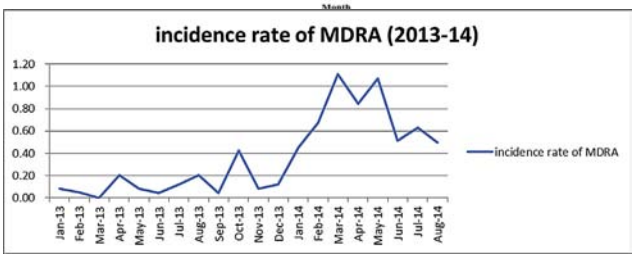
Purpose: Increasing evidences support the important role of contaminated environment in transmission of several key MDROs (MRSA, VRE, MDRA, Clostridium difficle and norovirus). The study in CMC also found that there were rooms for improvement on cleaning services.
Methods: The cleaning service on environment in hospital has been improved by:

1. Set ups a multi-disciplinary working group to look into cleaning services and standard.
2. Carry out study/audits to assess the environmental contamination and evaluate the effectiveness of cleaning standard.
3. Set up a Central Cleaning Team to enhance the cleaning service.
4. Develop the hospital guideline on environment / equipment cleaning and disinfection
5. Implement the color code system for cleaning service.
6. Employ high technology - Hydrogen Peroxide Vaporization for disinfection
7. Introduce the usage of 2-in-1 high level disinfectant and disposable wipes
8. Provide intensive and tailor-made trainings to cleaning staff

Results:

1. Additional resources is available to improve the cleaning service
2. Cleaning /disinfection standard for hospital environment available to guide the practices
3. Cleaning staff's competence is ensured through regular training and assessment
4. The spread of pathogens such as VRE and MDRA in hospital are under control





Conclusions: With the supports from hospital and through various improvement strategies, the environmental hygiene is improved and thus reducing the impact of healthcare-associated infections to patients.

OS 2-3

IMPLEMENTATION OF BUNDLE CARE FOR PREVENTION OF CENTRAL LINE ASSOCIATED BLOODSTREAM INFECTION AT INTENSIVE CARE UNITS

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Purpose: Bloodstream infection (BSI) is one of the serious healthcare associated infections resulting in high mortalities and costs. Central line is the leading infection focus of healthcare associated BSI at hospitals. Institute of Healthcare Improvement (IHI) has suggested implementation of bundle care to prevent central line associated bloodstream infections (CLABSI).
Methods: National Taiwan University Hospital (NTUH) is a 2500-bed medical center located in northern Taiwan which provides primary and tertiary medical care.The infection control team has implemented bundle care at intensive care units(ICU) with special focus on BSI prevention since 2009.We retrospective by evaluate its efficacy on decreasing BSI during implementation of bundle care.
Results: A 5 item-BSI care bundle modified from that of the Institute of Healthcare Improvement (IHI) at eight MICUs were implemented at NTUH. A multidisciplinary teamwork and computerized system were involved in this bundle care. This study analyses the MICU central line utilization and BSI density between Jan 2011 and Sep 2014 to assess the BSI bundle impact in a clinical setting. Totally 106,504 MICU patient days were analyzed. The compliance rate of healthcare workers to 5-elements was 94.1% during the study period. CABSI were decreased from 6.1‰ in 2011 to 3.3‰ in 2014. The CRBSI were decreased from 0.61‰ in 2011 to 0.37‰ in 2014. The utilization of central lines were 53.5% in 2011 and 57.9% in 2014 respectively.
Conclusions: Implementation of BSI bundle care significantly decreases the incidence of CLABSI at ICU. Multidisciplinary teamwork, education and a